



PTO/SB/96 (04-03)

Approved for use through 04/30/2003. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)Applicant/Patent Owner: ISIS Pharmaceuticals, Inc.Application No./Patent No.: 10/024,369 Filed/Issue Date: December 17, 2001Entitled: ANTISENSE MODULATION OF ABC TRANSPORTER MHC 1 EXPRESSIONISIS Pharmaceuticals, Inc., a Corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or2. ☐ an assignee of less than the entire right, title and interest.

The extent (by percentage) of its ownership interest is _____ %

in the patent application/patent identified above by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 012397, Frame 0484, or for which a copy thereof is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.☒ Copies of assignments or other documents in the chain of title are attached.

[NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

8-12-03

Date

760-931-9200

Telephone number

B. Lynne Parshall

Typed or printed name

Signature

Executive Vice President/CFO

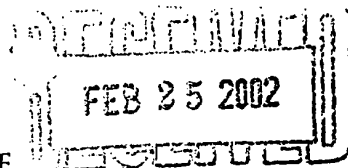
Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES
PATENT AND
TRADEMARK OFFICE



RTS-0353

FEBRUARY 19, 2002

PTAS

Under Secretary of Commerce For Intellectual Property and
Director of the United States Patent and Trademark Office
Washington, DC 20231
www.uspto.gov

LICATA & TYRELL, P.C.
JANE MASSEY LICATA
66 EAST MAIN STREET,
MARLTON NJ 08053



101930527A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 12/17/2001

REEL/FRAME: 012397/0484
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

BORCHERS, ALEXANDER H.

DOC DATE: 12/17/2001

ASSIGNOR:

WARD, DONNA T.

DOC DATE: 12/17/2001

ASSIGNOR:

FREIER, SUSAN M.

DOC DATE: 12/17/2001

ASSIGNEE:

ISIS PHARMACEUTICALS INC.
2292 FARADAY AVE
CARLSBAD, CALIFORNIA 92008

SERIAL NUMBER: 10024369
PATENT NUMBER:

FILING DATE:
ISSUE DATE:

.012397/0484 PAGE 2

JOANN STEWART, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS



DOCKET NO.: RTS-0353

"Express Mail" Label No.: EV05317712

Date of Deposit: 12-17-2001

9039 U.S. PTO
10/024369

12/17/01

FORM PTO-1595 1-31-92

01-02-2002

U.S. DEPARTMENT OF COMMERCE

Patent and Trademark Office

IEET

To The Honorable Commissio.
thereof.

101930527

record the attached documents or copy

1. Name of conveying party(ies):
Alexander H. Borchers, Donna T. Ward and Susan M.
FreierAdditional name(s) of conveying party(ies)
attached? () YES (X) NO3. Nature of Conveyance:
(X) Assignment () Merger
() Security Agreement
() Change of Name
() Other:

Execution Date: December 17, 2001

2. Name and address of receiving party(ies):
Name: Isis Pharmaceuticals Inc.
Internal Address:Street Address: 2292 Faraday Ave
City Carlsbad

State California Zip 92008

Additional name(s) & address attached?
() YES (X) NO

4. Application number(s) or patent number (s): N/A

If this document is being filed together with a new application, the execution date of the application is: 12/17/2001

A. Patent Application No.(s) Not yet assigned

B. Patent No.(s) N/A

Additional numbers attached? () YES (X) NO

5. Name and address of party to whom
correspondence concerning documents should be
mailed:Name: Jane Massey Licata or Kathleen A. Tyrrell
Address: Licata & Tyrell, P.C.
66 East Main Street
Marlton NJ 080536. Total number of applications and patents
involved: 17. Total fee (37 CFR 3.41): \$40.00
() Enclosed
(X) Authorized to be charged to deposit account

8. Deposit account number: 500252

(Attach duplicate copy of this page if paying by
deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is
a true copy of the original document.

Donna T. Ward / 48,271

Name of Person Signing/Reg.No.

Signature

Date

Total number of pages including cover sheet, attachments, and document: 4

Mail documents to be recorded with required cover sheet information to:

Commissioner of Patents and Trademarks
Box Assignments
Washington, D.C. 20231Public burden reporting for this sample cover sheet is estimated to average about 30 minutes per document
to be recorded including time for reviewing the document and gathering the data needed, and completing and
reviewing the sample cover sheet. Send comments regarding this burden estimate to the U.S. Patent and
Trademark Office, Office of Information Systems, PK2-1000C, Washington, D.C. 20231, and to the Office of
Management and Budget, Paperwork Reduction Project. (0651-0011).

A S S I G N M E N T

WHEREAS, we Alexander H. Borchers, residing at 733 Winding Way, Encinitas, California 92024, Donna T. Ward, residing at 41349 Magnolia Street, Murrieta, California 92562 and Susan M. Freier, residing at 2946 Renault Street, San Diego, California 92122 hereinafter referred to as the assignors, are the joint inventors of certain inventions or improvements for which we have made application for Letters Patent to the United States, identified as Case No. RTS-0353 entitled **Antisense Modulation of ABC transporter MHC 1 Expression**; filed concurrently herewith; and

WHEREAS, Isis Pharmaceuticals Inc. hereinafter referred to as the assignee, of 2292 Faraday Ave, Carlsbad, California 92008 is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in consideration of the sum of One Dollar (\$1.00) to each of us in hand paid by said assignee, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said assignors, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said application and any and all continuations, divisions and renewals of and substitutes for said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in our names applications for Letters Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.

AND we hereby covenant that we have full right to convey the entire interest herein assigned, and that we have not executed and will not execute any agreement in conflict herewith, and we further covenant and agree that we will each time a request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees, or legal representatives, and each of us agrees to communicate to said assignee or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent

DOCKET NO.: RTS-0353

protection for said inventions or improvements in any and all countries.

AND we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

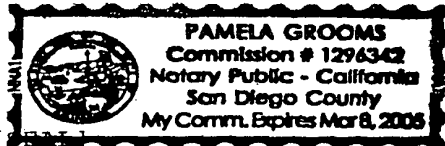
IN WITNESS WHEREOF, we have hereunto set our hands and seals.

Dated: 12/17/01

Alexander H. Borchers
Alexander H. Borchers

STATE OF California)
COUNTY OF San Diego) ss.

This 17th day of December 2001, before me personally came the above-named Alexander H. Borchers, who executed the foregoing Assignment in my presence, and who acknowledged to me that he/~~she~~ executed the same of his/~~her~~ own free will for the purposes set forth therein.



Pamela Grooms
Notary Public

DOCKET NO.: RTS-0353

Dated:

12/17/01

Donna T. Ward
Donna T. Ward

STATE OF

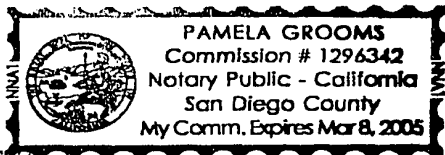
California

ss.

COUNTY OF

San Diego

This 17th day of December 2001, before me personally came the above-named Donna T. Ward, who executed the foregoing Assignment in my presence, and who acknowledged to me that ~~he~~/she executed the same of ~~his~~/her own free will for the purposes set forth therein.



[SEAL]

Pamela Grooms
Notary Public

Dated:

12/17/01

Susan M. Freier
Susan M. Freier

STATE OF

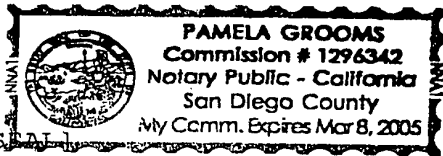
California

ss.

COUNTY OF

San Diego

This 17th day of December 2001, before me personally came the above-named Susan M. Freier, who executed the foregoing Assignment in my presence, and who acknowledged to me that ~~he~~/she executed the same of ~~his~~/her own free will for the purposes set forth therein.



[SEAL]

Pamela Grooms
Notary Public